

III. REMARKS

1. Claims 7, 8 and 17 are amended.

2. Applicant appreciates the Examiner's indication of the allowability of claims 7-10 and 17 and the allowance of claims 20-22. Claims 7-10 and 17 are amended in the manner indicated by the Examiner in order to gain their allowance.

3. Claims 1-6, 11-16, 18 and 19 are not anticipated by Nielsen under 35 U.S.C. §102(b).

First, Nielsen is not prior art for purposes of 35 U.S.C. §102(b), since the issue date of Nielsen is October 2, 2001, which is after the filing date of Applicant's specification on November 20, 2000. However, since the Examiner previously used Nielsen in a 35 U.S.C. §102(e) rejection, Office Action June 25, 2002, for purposes of this response, Applicant will again address the issues of that rejection. If Applicant's assumption is mistaken, a new Office Action and response period is respectfully solicited.

Second, the features of Applicant's invention, as recited in the claims, are not disclosed or suggested by Nielsen. Applicant's invention, as described in the specification, improves the quality of an amplifier that has at least an output stage and a modulator with the feedback comparator circuit 305 acting on the modulator circuit 301 to improve the audio quality of the output stage 302.

In Applicant's invention, as recited in claim 1, the input signal is a digital word. Nielsen does not disclose or suggest such discrete digital input signals. Nielsen relies on analog inputs.

There is no suggestion or disclosure in Nielsen that the signal from the outside to the amplifier is digital. Rather, Nielsen relates solely to a power amplifier with an audio frequency signal.

The Examiner correctly points out that a comparator is a stage of the Nielsen modulator. FIG. 2 shows that the modulator is an oscillator and comparator. The Examiner is referred to FIG. 10 of Nielsen where the comparator is shown as the last stage, or output, of the modulator. Nothing more is shown and nothing more can be assumed. The Examiner is merely speculating that the comparator of Nielsen could be the first stage of the modulator, since Nielsen does not describe or show this particular structure. The Examiner must rely on the embodiment shown in FIG. 10 of Nielsen, where the "comparator" is clearly the "last" stage of the modulator. The output of the comparator is input directly to the Sw. Amp. Thus, unlike Applicant's invention, the comparator cannot control the modulator. There is simply no disclosure or suggestion in Nielsen that would place this comparator output as an input to the Nielsen modulator. In Applicant's invention, the comparator 305 is used to control the modulator. (See e.g., FIG. 5, 6, page 9, line 28 through page 10, line 4).

In Applicant's invention, as recited in claim 1, the modulator circuit is controlled by a digital control signal. The digital control signal (307) is generated by comparing, via feedback, the digital input signal (IN) of the audio output stage to a signal generated in the audio output stage that is proportional to a previous digital input signal. This is not disclosed or suggested by Nielsen. In Nielsen, one input signal to the modulator is analog. Although the comparator of Nielsen may

generate a digital output, there is not even a remote suggestion that this output signal "controls" the modulator, and this is contradicted by FIG. 10 of Nielsen. The Examiner is again referred to, for example, FIG. 5 of Applicant's specification for an illustration of what is recited in the claims.

As shown in FIG. 5, both inputs to the modulator circuit 301, and 306, are digital. This is clearly distinctive from Nielsen where one input to the modulator is clearly identified as being a "analog" signal. Thus, Nielsen cannot anticipate this feature of Applicant's invention, as is recited in the claims. For anticipation, under 35 U.S.C. §102(b), each and every element must be disclosed. This is not the case here.

In claims 1, 11 and 18, the "feedback" is by means of a comparator. This is not disclosed or suggested by Nielsen. In Nielsen, referring to FIGS. 2 and 10, the comparator is clearly part of the modulator, and there is no disclosure or suggestion of the feedback loop as claimed by Applicant. In Applicant's invention, referring to, for example, FIGS. 3, 4, 5 and 10, the comparator 305 is an independent block, used to control the properties of the modulator itself. Furthermore, FIGS. 2 and 10 of Nielsen clearly illustrate that the "comparator" is the last stage of the modulator and directly feeds the Sw. Amp. Thus, the output of the comparator does not feed back, and cannot control the modulator as is claimed by Applicant.

Thus, each and every feature of Applicant's invention, as recited by Applicant in the claims is not specifically recited, disclosed or suggested by Nielsen. As required for purposes of 35 U.S.C. §102.

Claim 23 is not anticipated by Nielsen under 35 U.S.C. §102(e). (The same discussion above regarding the application of 35 U.S.C. §102(b) applies to claim 23 as well).

Claim 23 recites "comparing, by means of feedback" a digital input signal of the audio output stage to a signal generated in the audio output stage that is proportional to a previous digital input signal. This is not disclosed or suggested by the Examiner.

The Examiner refers to FIG. 2 of Nielsen, but should also note FIG. 10, in light of the discussion above.

The Modulator (Oscillator and Comparator) of Nielsen shows two inputs. A lower "analog" input signal and an upper "feedback" signal from the demodulator. Thus, Nielsen does not in any way disclose or suggest a "digital input signal" being compared to a signal generated in the audio output stage. The input signal in Nielsen is clearly an "analog" signal.

Applicant respectfully traverses the Examiner's statements that "the comparator inherently generates a digital control signal since the modulator wouldn't work without the digital control signal." Referring to FIG. 1 of Nielsen, the modulator is shown with an "analog" input signal. Thus, the modulator of Nielsen must work as shown and described?

Also, claim 23 recites that the digital control signal generated by the comparison of the digital input signal to the audio output stage to the signal generated in the audio output stage controls "an operation of the modulator circuit" where "at least one reference level in the modulator is changed by the digital control signal. This is not disclosed or suggested by Nielsen.

In Nielsen, referring to FIG. 2, the modulator comprises an "Oscillator and Comparator." There is nothing in the figure or written description suggesting that an output of the comparator controls the modulator or changes at least one reference level and the modulator. Based on FIG. 2 of Nielsen as well as FIG. 10, the output of the comparator is shown as being be direct to the amplifier, not as a feedback or control to the modulator. There is no disclosure to suggest otherwise. Neither FIGS. 2, 10, nor the written description of Nielsen suggest that the comparator controls the modulator as stated by the Examiner. All that FIG. 2 shows is that the modulator is the oscillator and comparator, and FIG 10 shows the comparator as the last stage, with its output being the input to the Sw. Amp. Anything further is mere speculation.

The Examiner appears to be making assumptions about Nielsen that are simply not borne out by the figures and written description, particularly for purposes of 35 U.S.C. §102.

The Examiner is referred to FIG. 5 of Applicant's invention, where one example of Applicant's invention is illustrated. As shown in Fig. 5, the output of the comparator 305 is an input to the modulator circuit 301, and "controls" as claimed by Applicant, the modular circuit 301. This is much different than Nielsen where there is no such input to the modular.

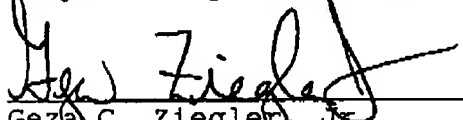
Thus, since each feature of Applicant's invention, as recited in claim 23, is not disclosed or suggested by Nielsen, a *prima facie* case of anticipation, for purposes of 35 U.S.C. §102(e), is not established. Thus, claim 23 is allowable.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in

proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

The Commissioner is hereby authorized to charge \$678 for a two-month extension of time and three additional independent claims fees, as well as payment for any other fees associated with this communication or credit any over payment, to Deposit Account No. 16-1350.

Respectfully submitted,


Geza C. Ziegler, Jr.
Reg. No. 44,004

25 MARCH 2004
Date

Perman & Green, LLP
425 Post Road
Fairfield, CT 06824
(203) 259-1800 Ext. 134
Customer No.: 2512

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being transmitted by facsimile to (703) 872-9306 on the date indicated below.

Date: 3/25/04

Signature: Suzanne Foley